

Amendments to the Claims

Please replace the present claims with the following amended set of claims.

Listing of Claims:

1. (Currently Amended) A microfluidic device for assaying a liquid biological sample of 20 μ L or less comprising:

- (a) an inlet port for receiving said sample;
- (b) an enclosed unidirectional capillary passageway in fluid communication with said inlet port;
- (c) an enclosed inlet chamber in fluid communication at one side thereof with the enclosed unidirectional capillary passageway of (b), thereby permitting said sample to flow into said inlet chamber, said inlet chamber containing means for uniformly distributing said sample across said chamber and, displacing air from said chamber at a side opposite the entry of said capillary passageway; and
- (d) at least one vent passageway for removing air displaced by said liquid sample at a side opposite the entry of said capillary passageway.

2. (Original) A microfluidic device of Claim 1 wherein said means for uniformly distributing said sample is at least one groove extending across said inlet chamber.

3. (Original) A microfluidic device of Claim 1 wherein said means for uniformly distributing said sample is at least one weir extending across said inlet chamber.

4. (Original) A microfluidic device of Claim 2 or 3 wherein said at least one groove or at least one weir contains wedge-shaped cutouts to facilitate uniform flow of said sample.

5. (Original) A microfluidic device of Claim 1 wherein said means for uniformly distributing said sample is a microstructure comprising an array of posts disposed across said inlet chamber.

6. (Original) A microfluidic device of Claim 5 wherein said posts contain wedge-shaped cutouts to facilitate uniform flow of said sample.

7. (Original) A microfluidic device of Claim 1 wherein said inlet port is tapered to engage the corresponding shape of a pipette for depositing said sample

8. (Original) A microfluidic device of Claim 1 further comprising an blood anti-coagulant deposited in said inlet chamber.

9. (Original) A microfluidic device of Claim 1 further comprising an overflow chamber in fluid communication with said inlet chamber, said overflow chamber for receiving said sample in excess of the amount needed to fill said inlet chamber.

10. (Original) A microfluidic device of Claim 9 wherein said overflow chamber contains an indicator to detect the presence of excess of said sample.

11. (Cancelled).

12. (Cancelled).

13. (Cancelled).